Installation Guide
Replacing HDDs in MMS Servers

Overview

The AMX line of MAX-MMS servers support hot-swappable hard disk drives (HDDs), accessible behind the removable faceplate, on the front panel. Typically a new HDD will be required only if an existing one has failed. Only HDDs provided by AMX can be used as replacements in MMS servers, and in order to replace a HDD in an MMS server, the drive must be installed and authenticated according to the steps outlined in this document.

- The MMS-01S, MMS-02S, MMS-04S and MMS-12S servers all utilize 250GB hard drives, and require the ***MMS-HDD250G*** 250GB drive (**FG 2178-250**) for replacements.
- The MMS-900 server utilizes 300GB hard drives, and requires the ***MMS-HDD300G*** 300GB drive (**FG 2178-300**) for replacements.

There are several operations that are required to successfully replace an HDD in a MMS server, all off which are described in this document:

1. The physical removal of the damaged HDD, and the subsequent installation of the replacement HDD.
2. A rebuild of the RAID array on the new HDD (required in order to add it to the server's RAID array).
3. Authentication of the new HDD with the MMS server. Note that before the HDD can be authenticated to the server it must first be added into the array.

***Note**: The MMS-01S server does not utilize a RAID disk-drive system. In this case there is no need to rebuild the array (as described below), but the replacement HDD still needs to be authenticated (see "Step 4: Authenticate the New HDD" below).*

Step 1: Identify the Drive That Needs To Be Replaced

To identify the drive that needs to be replaced, you'll use the server's built-in Disk Management Utility tool. This requires that you have a PC connected to the MMS:

- If you intend to connect to the MMS via a LAN connection, verify that the PC is communicating properly with the network.
- Use an RJ-45 twisted pair cable to connect the Ethernet port on the MMS to the LAN that your PC is on.

Once you have established communication between the MMS server and your PC, you'll use your web browser to access the server's Disk Management Utility interface to see which port has failed. You'll need this information to identify the physical HDD that needs to be pulled from the unit and replaced:

1. Launch a web browser (i.e. Internet Explorer).
2. Enter the IP address of the target MMS server in the address bar (example: http://192.168.1.30:1080). You can use the WinMAX program to determine the server's IP address (displayed in the System Information tab).

   Don't forget to include the port number.

   Note:** If you are using Mozilla as your browser, you'll need to override the security that blocks port 1080. To unblock port 1080, add the following line (located at* **/usr/lib/mozilla/defaults/pref/all.js):*

   ```
   pref("network.security.ports.banned.override","1080")
   ```

3. Press **Enter** to open the Disk Management Utility - Home Page (FIG. 1).

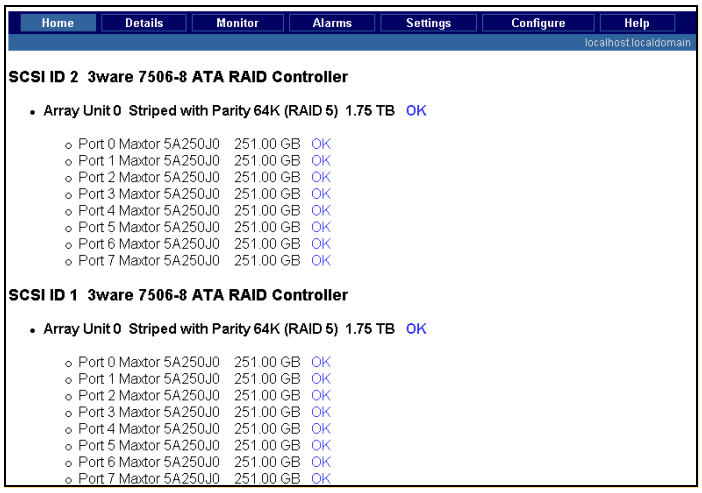

FIG. 1 Disk Management Utility - Home page

4. Click on the **Configure** tab at the top of the screen to access the *Configure* page (FIG. 2) which lists all drives in each array and their status. If a drive has failed, it will be labeled "Degraded" rather than "OK".

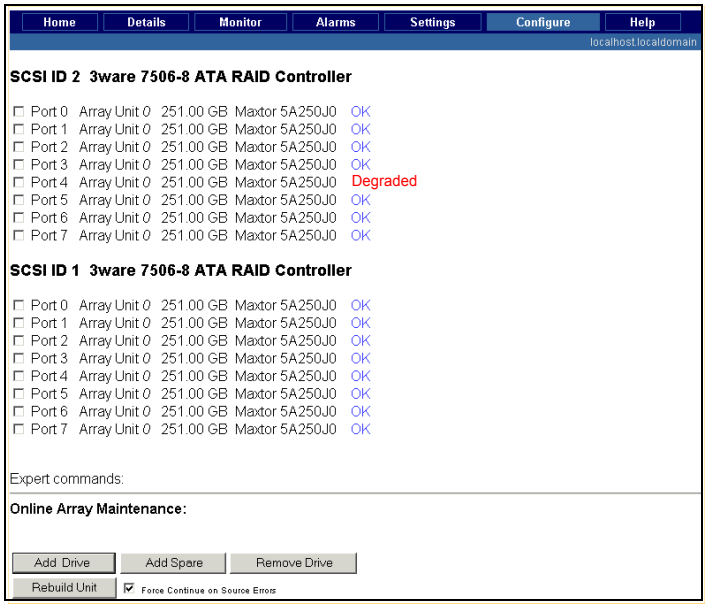

FIG. 2 Disk Management Utility - Configure page

5. Note the **Port Number** of the Degraded drive, and determine which physical drive needs to be replaced in the server, based on the charts in FIG. 3:

PORT 0	*PORT 1*	*PORT 2*	*PORT 3*

MMS-04S (front)

PORT 2	*PORT 5*	*PORT 8*	*PORT 11*
PORT 1	*PORT 4*	*PORT 7*	*PORT 10*
PORT 0	*PORT 3*	*PORT 6*	*PORT 9*

MMS-12S (front)

PORT 0	*PORT 6*	*PORT 12*	*PORT 18*
PORT 1	*PORT 7*	*PORT 13*	*PORT 19*
PORT 2	*PORT 8*	*PORT 14*	*PORT 20*
PORT 3	*PORT 9*	*PORT 15*	*PORT 21*
PORT 4	*PORT 10*	*PORT 16*	*PORT 22*
PORT 5	*PORT 11*	*PORT 17*	*PORT 23*

MMS-900 (front)

FIG. 3 Port to HDD correlation - MMS-04S, MMS-12S and MMS-900 servers

Also note that the LED on the degraded drive should blink to indicate that it needs to be replaced.

Once you have determined which drive needs to be replaced, you can proceed to physically removing the bad drive, and installing the replacement drive (see reverse).

Step 2: Physical Removal and Replacement of the Drives

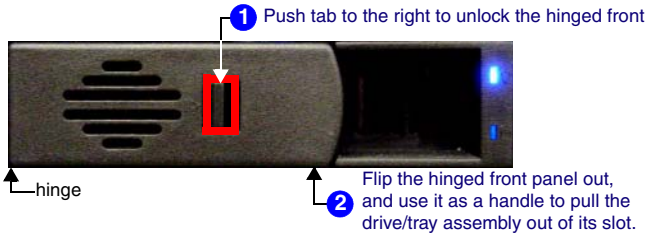

FIG. 4 Removable drive/tray assembly (front panel)

1. Remove the faceplate from the front panel of the server.
2. Remove the damaged HDD. Each HDD is mounted in a tray that slides in and out of the server. To remove the drive/tray assembly (FIG. 4):
   a. Push the tab on the front of the drive tray to the right to unlock the hinged front panel. Flip the hinged panel out and use it as a handle to gently pull the drive/tray assembly out of its slot.
   b. Remove the drive from the drive tray. The drive is secured to the tray with four screws on the bottom panel.
3. Install and secure the replacement drive into the drive tray.
4. Slide the replacement drive/tray assembly fully into the slot, and push the hinged front panel back into its locked position. The LEDs on the front of the HDD should light to indicate that it has been connected and is communicating properly.
5. Replace the faceplate on the server.

Step 3: Rebuild the RAID Array

Once the new HDD has been installed, the drive must be added to the server's RAID array. This entails rebuilding the RAID array on the new HDD.

To rebuild the RAID array, you must have a PC connected to the MMS server:

- If you intend to connect to the MMS via a LAN connection, verify that the PC is communicating properly with the network.
- Use an RJ-45 twisted pair cable to connect the Ethernet port on the MMS to the LAN that your PC is on.

Once you have established communication between the MMS server and your PC, you'll use your web browser to access the server's Disk Management Utility interface:

1. Launch a web browser.
2. Enter the IP address of the target MMS server in the address bar (example: http://192.168.1.30:1080). You can use the WinMAX program to determine the server's IP address (displayed in the *System Information* tab). Don't forget to include the port number.
3. Press **Enter** to open the Disk Management Utility - Home Page (FIG. 1).
4. Click on the **Configure** tab at the top of the screen to access the *Configure* page (FIG. 2) which lists all drives in each array and their status. If a drive has failed, it will be indicated on this page (labeled "Degraded" rather than "OK").
5. Check the box next to the failed drive that you are removing, and click the **Remove Drive** button at the bottom of the screen.
6. Check the box again and click the **Add Drive button** at the bottom of the page.
7. Check all boxes next to all the drives (only in the array that contains the replaced HDD).
8. Check the **Force Continue On Source Errors** checkbox at the bottom of the screen.
9. Click the **Rebuild Unit** button. Expect a delay of approximately two minutes before the rebuild process begins.
10. Click on the **Home** tab at the top of the screen to return to the Home page, where you can monitor the process of the rebuild.

    Once started, the process of rebuilding the array should take approximately 1.5 hours to complete. *Do not interrupt this process.*

    The message "*Rebuild Complete*" is displayed next to the drive (on the Home page) when the process is finished.

    At this point you can close the Disk Management Utility, and continue to use the server as usual. There is no need to reboot the server.

Step 4: Authenticate the New HDD

When an HDD is replaced in a MMS server, it must be authenticated before the system will play media content. HDDs are authenticated using two criteria, unique to each replacement HDD:

- *HDD Serial Number*: 8-characters, printed on a decal located on the bottom of the drive.
- *HDD Authentication Key*: 16-characters, printed on a piece of paper included with the new HDD.

***Note**: Before the HDD can be authenticated to the server it must first be added into the array.*

The HDD authentication process is handled via the built-in user-interface on the MMS server which is accessible via the telnet window provided in WinMAX.

a) Open a telnet session with the MMS server:

1. Launch WinMAX, open the *System Information* tab, and verify that you are communicating with the intended MMS server by checking the *Server IP Address or URL* field.
2. Click on the **Server Configuration** button to open a telnet window.
3. After a brief delay, the *Admin Menu* is displayed (FIG. 5).

b) Authenticate the new HDD:

1. Select **Authenticate a New HDD** from the Admin Menu.
2. Enter the 8-digit serial number of the HDD. (printed on a decal located on the bottom panel of the HDD).
3. Enter the 16-digit authentication key supplied by AMX for that HDD (printed on a slip of paper included with the replacement drive).

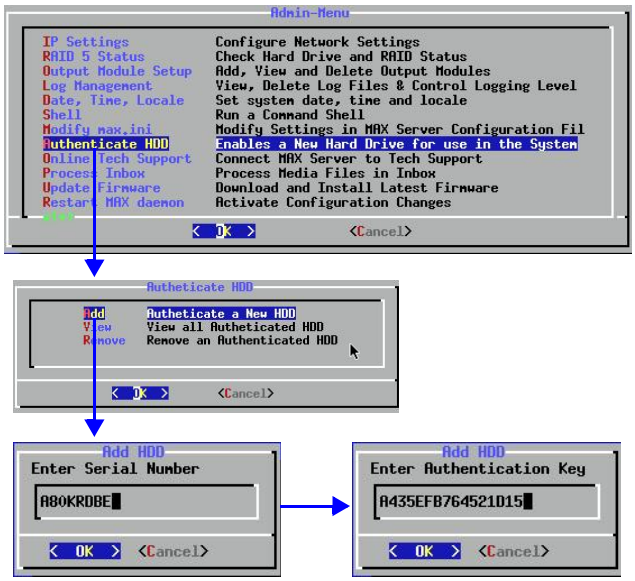

FIG. 5 Admin Menu, Authenticate HDD, and Add HDD dialogs

MMS Admin Menu

Use the other options in the *Authenticate HDD* menu (accessible via the Admin Menu on the MMS), to manage all HDDs in the server, as shown in FIG. 5.

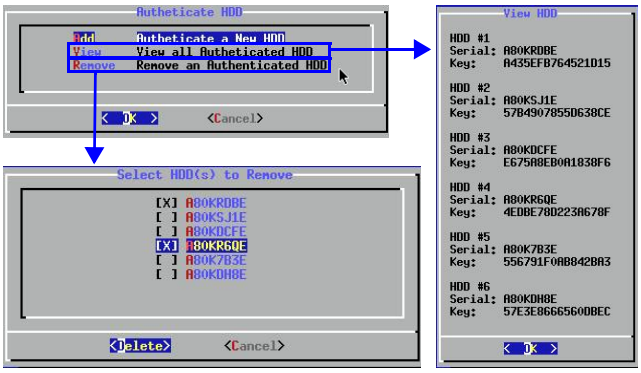

FIG. 6 Authenticate Menu - View HDD and Select HDD(s) to Remove dialogs

The options in the Authenticate HDD menu are described below:

- Add: Select to authenticate a new HDD, as described in the previous section.
- View: Select to view all the serial numbers and keys for HDDs in the system. Note that this list only indicates HDDs that have been successfully authenticated.
- Remove: Select to remove a selected HDD from the system. One or more drives can be removed at a time.

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